

R E M A R K S

The last Office Action has been carefully considered.

Claims 1, 3, 8 and 10 are rejected under 35 USC 102(b) over the U.S. patent to Eckardt.

Claims 1, 2 and 4 are rejected under 35 USC 102(b) over the U.S. patent to Yokotani.

Claims 1, 5 and 6 are rejected under 35 USC 102(a) over the U.S. patent application publication to Steinruecken.

Claim 7 is rejected under 35 USC 103(a) over the U.S. patent to Eckardt in view of the U.S. patent application publication to Busch.

Claim 9 is rejected under 35 USC 103(a) over the U.S. patent to Eckardt in view of the U.S. patent to Higgs.

Also, the Abstract of the Disclosure, the drawings and the claims are objected to for formal reasons.

In connection with the Examiner's formal objections, the abstract of the disclosure has been amended, Claim 4 has been cancelled, and Claim 6 has been amended as well. It is believed that the grounds for the formal objections and rejections should be considered as no longer tenable and should be withdrawn.

In view of the Examiner's rejection of the claims over the art, Claim 1, the broadest claim on file, has been amended to more clearly define the present invention and distinguish it from the prior art.

Claim 1 now specifically defines, in addition to the other features, that the magnetic field is substantially perpendicular to the sensor elements (7, 8), the sensor elements (7, 8) are arranged one after the other in a direction of movement of the transmitter element (11), and the sensor elements (7, 8) are associated with edges of a gap (21) in a rotary direction of the transmitter element.

The support for the substantially perpendicular arrangement of the magnetic field relative to the sensor element is clearly shown in Figures 1, 2, 7, 8, 9, in particular in Figures 7 and 8 the associated coordinate system x, y, z is identified, so that the perpendicular arrangement of the arrow B for the direction of the magnetic field can be clearly recognized. Also, the corresponding description is provided for

example in the first paragraph on page 4. The arrangement of the sensor elements (7, 8) at the edges of the gap (21) is clearly shown in the drawings. It should be further emphasized that it is important for the gradiometer principle that the sensors (7, 8) are arranged differently, but each receive a signal. Because of the different position of the both sensors (7, 8) a close and a far measuring signal is detected, from which the difference is formed.

Turning now to the prior art applied by the Examiner, and in particular to the patent to Eckardt, it can be seen from consideration of Figures 8, 9 and 10 with the corresponding description that here two measuring elements (18) provide measurements and a difference is formed, but the arrangement in this reference is different from the arrangement which is now defined in Claim 1. From consideration of Figure 9 of the patent to Eckardt, it can be seen that the slot (17) is formed in the movement direction of the transmitter wheel. Further, both sensor elements (18) are always arranged over the slot (17) as shown in Figure 8. The Examiner indicated that in the patent to Eckardt the slot shown in Figure 9 must be turned by 90 degrees to be similar to the present invention. This turning by 90 degrees however is not sufficient, since thereby the sensor elements would be arranged no longer in the movement direction one after the other, but instead perpendicularly near one another to the movement direction. Therefore, the gradiometer

principle will no longer be achieved. It must be also recognized that the arrangement of both sensor elements one after the other in the movement direction must be maintained and furthermore both sensor elements must be arranged at the edges of the gap in the applicant's invention.

It is believed to be clear that this reference does not teach the new features of the present invention which are now defined in amended Claim 1.

The arrangement disclosed in the patent to Yokotani does not provide operation in accordance with the gradiometer principal. While the magnetic field is arranged perpendicular to the measuring element (3), there are no two measuring elements. As can be clearly seen from Figures 2 and 4, there is a single measuring element arranged in a central position. It corresponds in Figure 9 to a single element of a Wheatstone's bridge, which is composed of two resistors, that, however can be interpreted as providing more than one sensor element. A comparison can be made with the Eckardt reference, where for example in Figure 10 also an individual sensor element (18) of Wheatstone's bridge is shown that has four measuring elements.

This reference also does not teach the new features of the present invention as defined in amended Claim 1.

The Steinruecken reference discloses an arrangement which does not operate in accordance with the gradiometer principal. There is always only a single sensor element. Reference can be made to page 1, paragraph 006, in which it is stated that the magnetic flux must be reduced in z direction, or in other words in a direction toward the transmitter wheel with the arrangement in accordance with this reference. The general arrangement is disclosed in paragraph 0035, however, there are no detailed description of the concrete arrangement which would be similar to the arrangement as defined now in amended Claim 1 of the present application.

The Busch reference discloses an inclined magnetizing, as can be seen from the drawings. The objective in this reference is to provide a calibration of the measuring elements (42, 44). The sensor elements can be positioned in a simple manner to guarantee a balancing of the bridge of the sensor elements in the magnet design. This reference also does not teach the new features of the present invention as defined in amended Claim 1.

The original claims were rejected over the references as being anticipated. In connection with this, it is believed to be advisable to cite the decision In Re: Lindenman Maschinenfabrik GmbH v. American

Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir 1984) in which it was stated:

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.”

Definitely, none of the references discloses each and every element of the present invention as defined in amended Claim 1.

Some claims were rejected also as being obvious over the combination of the references. As mentioned hereinabove, none of the references teaches the new features of the present invention as defined in amended Claim 1. As for the combination of the references, it would not be sufficient to combine the references. In order to arrive at the applicant's invention as defined in amended Claim 1 from a combination of the references, the references have to be fundamentally modified by including into them the new features of the present invention which are defined in amended Claim 1. However, it is known that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision In Re Randol and Redford (165 USPQ 586) that:

Prior patents are references only for what they clearly disclose or suggest, it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

In view of the above presented remarks and Amendments, it is believed that Claim 1 should be considered as patentably distinguishing over the art and should be allowed.

As for the dependant claims, these claims depend on Claim 1, they share its allowable features, and they should be allowed as well.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue.

Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,


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